Project 1

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Analysis

Analysis a detailed examination of anything complex in order to understand its nature or to determine its essential features

Data analysis is defined as a process of cleaning, transforming, and modeling data to discover useful information for business decision-making. The purpose of Data Analysis is to extract useful information from data and taking the decision based upon the data analysis.

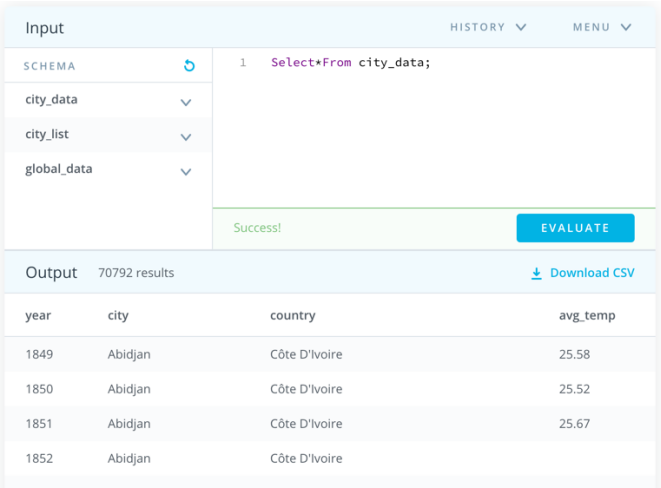
this project, i will analyze local and global temperature data and compare the temperature trends where you live to overall global temperature trends.

Data :

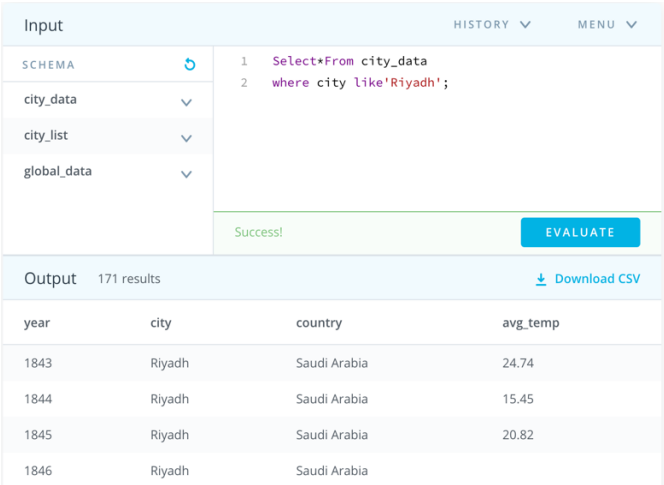
City_data

City_list

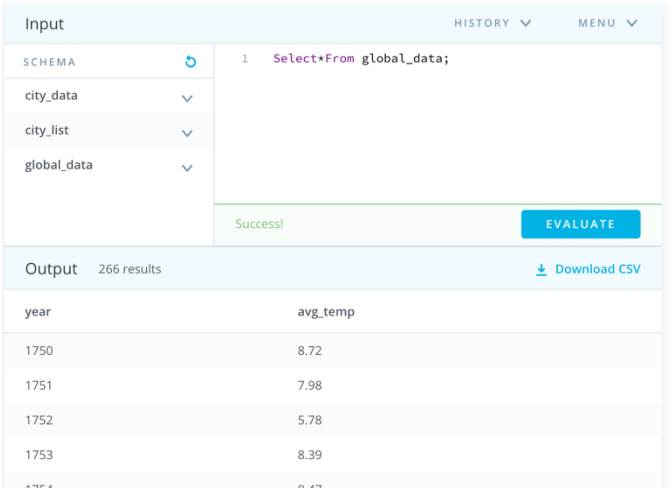
Global_data



My city Riyadh I well wright query to filter the city the Column year, city, country and avg_temp.



The global_data the Column year and avg_temp.



Moving average

Moving averages are used to smooth out data to make it easier to observe long term trends and not get lost in daily fluctuations.

Simple moving average :

(x1+x2+…xn)/n

Excel Microsoft

City_data Riyadh

year	city	country	avg_temp	moving_avg
1843	Riyadh	Saudi Arabia	24.74	
1844	Riyadh	Saudi Arabia	15.45	
1845	Riyadh	Saudi Arabia	20.82	
1846	Riyadh	Saudi Arabia		
1847	Riyadh	Saudi Arabia		
1848	Riyadh	Saudi Arabia	24.56	
1849	Riyadh	Saudi Arabia	24.8	

Create new Column "moving_avg" .

year	city	country	avg_temp	moving_avg	
1843	Riyadh	Saudi Arabia	24.74		
1844	Riyadh	Saudi Arabia	15.45		
1845	Riyadh	Saudi Arabia	20.82		
1846	Riyadh	Saudi Arabia			
1847	Riyadh	Saudi Arabia			
1848	Riyadh	Saudi Arabia	24.56		
1849	Riyadh	Saudi Arabia	24.8	=AVERAGE(D2:D8)	

Select average function and select 7 avg_temp consecutive of year.

year	city	country	avg_temp	moving_avg
1843	Riyadh	Saudi Arabia	24.74	
1844	Riyadh	Saudi Arabia	15.45	
1845	Riyadh	Saudi Arabia	20.82	
1846	Riyadh	Saudi Arabia		
1847	Riyadh	Saudi Arabia		
1848	Riyadh	Saudi Arabia	24.56	
1849	Riyadh	Saudi Arabia	24.	22.074
1850	Riyadh	Saudi Arabia	24.34	21.994
1851	Riyadh	Saudi Arabia	25.03	23.91

Coby the function to next value .

global_data

year	avg_temp
1750	8.72
1751	7.98
1752	5.78
1753	8.39
1754	8.47
1755	8.36
1756	8.85

Create new Column "moving_avg".

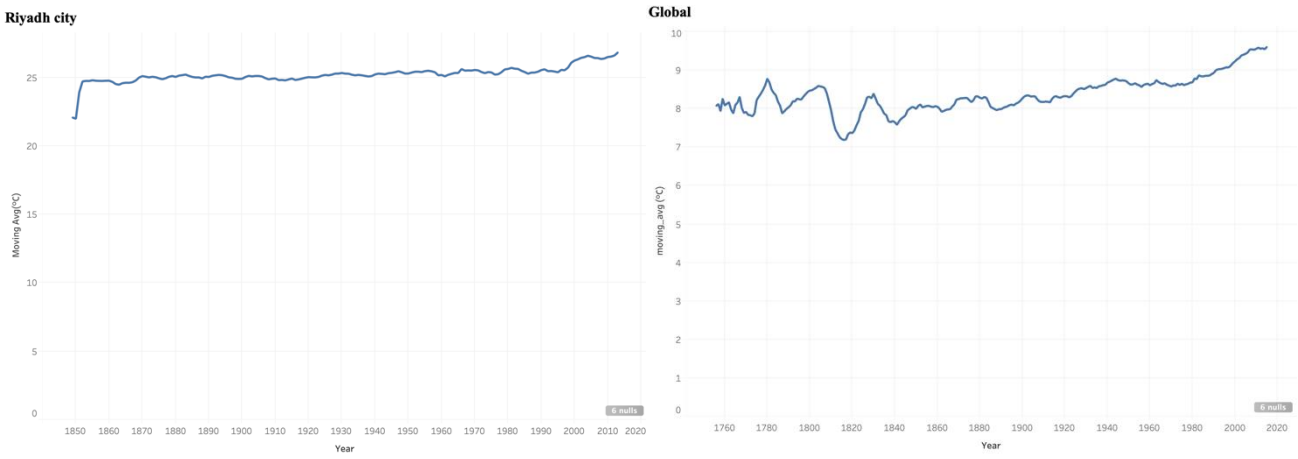
year	avg_temp	
1750	8.72	
1751	7.98	
1752	5.78	
1753	8.39	
1754	8.47	
1755	8.36	
1756	8.85	=AVERAGE(B2:B8)

Select average function and select 7 avg_temp consecutive of year.

year	avg_temp	
1750	8.72	
1751	7.98	
1752	5.78	
1753	8.39	
1754	8.47	
1755	8.36	
1756	.85	8.078571
1757	9.02	8.121429
1758	6.74	7.944286
1759	7.99	8.26

Coby the function to next value .

Visualize



Is your city hotter or cooler on average compared to the global average? Has the difference been consistent over time?

My city Riyadh is much hotter compared to the global average, the difference was increasing in the early years and in the middle it became constant and in the end the global average increased, but it did not reach the level of my city.

“How do the changes in your city’s temperatures over time compare to the changes in the global average?”

The temperature was low in the first year and rose in 1850 and the temperature was moderate, but there were slight fluctuations until the end of the year 2013, it rose slightly, and the global average is not constant compared to my city.

What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?

The general trend is high compared to previous years, the world is getting hotter, from the year 1750 until the year 1850 the general level was not constant and there are sudden highs and lows, and from 1851 to 2020 in slightly high fluctuations.
What tools did you use for each step?

I use the sql query to take the data , use the excel to calculate the moving average and visualized data use tableau .

How did you calculate the moving average?
I use the excel to calculate the moving average 7 day : (x1+x2+…xn)/n .

What were your key considerations when deciding how to visualize the trends?
The data is correct, error-free and missing value, real data content and visualize type.